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Health Education on Dengue Hemorrhagic Fever (DHF) for Disease Transmission Prevention

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Abstract: Dengue Hemorrhagic Fever (DHF) remains a significant public health concern in tropical countries such as Indonesia, particularly during the rainy season. Early education and awareness are crucial in minimizing morbidity and mortality caused by the disease. This community engagement activity aimed to improve knowledge and awareness among patients, families, and visitors at UPT RSUD Labuang Baji Makassar regarding the prevention and early identification of DHF. The program involved structured health education sessions using a Satuan Acara Penyuluhan (SAP) plan, which included presentations, discussions, and distribution of educational materials such as posters and leaflets. The sessions were conducted in inpatient wards, engaging patients and their families. The intervention enhanced participants' understanding of DHF symptoms, transmission, critical phases, and preventive measures such as maintaining environmental hygiene, proper water management, and promoting healthy behaviors. Increased motivation among family members was observed in taking part in preventive actions at home and in their communities. Health education efforts targeting both patients and their families are effective in raising awareness and promoting behavioral changes for DHF prevention. Continuous collaboration between healthcare providers and the community is essential to sustain preventive measures and reduce the incidence of DHF.

Keywords: Dengue Hemorrhagic Fever, health education, community engagement, hospital-based intervention.

1. Introduction

Dengue Hemorrhagic Fever (DHF) is a severe complication of dengue fever caused by the dengue virus and transmitted through the bite of Aedes aegypti mosquitoes, which commonly live near human dwellings. Clinical manifestations of DHF include a sudden high fever reaching up to 39°C for 2–7 days, followed by a rapid decline in temperature. During this period, patients may also experience headache, skin rash, bleeding gums, nosebleeds, muscle and joint pain, fatigue, nausea, and in severe cases, vomiting blood or passing black stools. A critical phase may occur when the body temperature drops and the patient feels cold despite appearing to improve—this is the most dangerous phase, as it may lead to dengue shock syndrome (Nadia, 2024). The spread of this disease is influenced by human factors as hosts, mosquitoes as vectors, and the surrounding environment (WHO, 2010).

DHF is categorized as an arboviral disease and remains one of the major public health issues in tropical countries. According to WHO data from 2015, dengue remains highly prevalent in tropical regions, with approximately 96 million cases reported across 128 countries, making these regions the largest contributors to global DHF cases. As a tropical country, Indonesia provides an ideal habitat for dengue-carrying mosquitoes. The incidence of DHF typically increases during the rainy season, and without timely treatment, the disease can be fatal (Ismah et al., 2021). Based on the 2021 Indonesia Health Profile, there were 73,518 reported DHF cases with 705 deaths, resulting in a mortality rate of 0.96 per 100,000 population (Saputra et al., 2023).

Dengue fever is among the diseases prioritized for prevention and control. Efforts to reduce the mortality rate from dengue include three main strategies: the development of vaccines for high-risk populations, implementation of evidence-based vector control measures, and environmental sector collaboration to eliminate mosquito breeding grounds (Saputra et al., 2023). Furthermore, community-based prevention efforts through health education programs are crucial for raising awareness and promoting preventive behaviors against DHF (Anggraini et al., 2021). Although Indonesia has implemented numerous DHF prevention programs, the disease remains a persistent public health concern. This underscores the need for

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ongoing health education. In this regard, the community service team will conduct health education sessions for inpatients at UPT RSUD Labuang Baji Makassar. This initiative is supported by research conducted by Panjaitan (2021), which demonstrated that health education significantly improves public knowledge and encourages active participation in disease prevention efforts.

2. Materials and Methods

Health counseling at UPT Labuang Baji Hospital Makassar with the group counseling method includes lectures, discussions and questions and answers to patients and their families with the following agenda of service activities:

Tabel 1: Planning of Action (POA)

No	Time	Counseling activities	Participant activities
1	5 minutes	Unveiling: 1. Introducing yourself 2. Convey the purpose and purpose of the implementation of counseling 3. Exploring the target's knowledge of the material to be delivered	1. Answering greetings 2. Pay attention to answering questions
2	35 minutes	Implementation: 1. Explaining Dengue Fever 2. Explaining the purpose of counseling for the prevention of Dengue Fever disease 3. Explain the signs and symptoms of Dengue Fever as well as the complications of the disease in bleeding and the risk of shock 4. Explain how to prevent *Dengue Fever*	1. Listen to the explanation 2. Ask questions about the material
3	20 minutes	Evaluation: 1. Asking patients and families to explain again about Dengue Fever 2. What is the purpose of Dengue Fever prevention measures 3. What are the complications and how to treat them immediately.	1. Pay attention to explanations; patients and families repeat the explanations given in their own language. 2. Fluent in answering questions from counseling
4	5 minutes	Cover: 1. Summing up the material 2. Convey evaluation results and feedback 3. Thanking you for participating and saying hello	Answering greetings

3. Results and Discussion

The health education activity on the prevention of Dengue Hemorrhagic Fever (DHF) was initiated through a structured and systematic preparation phase. This included the development of a Health Education Implementation Plan (Satuan Acara Penyuluhan or SAP), which outlined the objectives, materials, methods, media, and evaluation of the session. The primary goal was to enhance the knowledge of inpatients, their accompanying family members, and hospital visitors about the causes, transmission, and preventive measures for DHF.

This intervention was considered highly necessary, given the rapid spread of the dengue virus, especially during the rainy season. DHF is known to affect all age groups and genders indiscriminately (Yacoub & Wills, 2015; Adolph, 2016). Therefore, direct education targeting those most at risk—such as patients and their families—is crucial to empowering them to take preventive action at the household level.

Supporting tools such as leaflets, visual media, and real-life examples of clean and healthy lifestyle practices were prepared in advance. The session was conducted interactively in the inpatient wards of UPT RSUD Labuang Baji Makassar. Patients, family members, and visitors actively participated in the discussion and Q&A sessions, making the educational process more effective. Involving families in the education process proved vital, as they play a central role in preventing disease transmission and supporting patient recovery (Nurfatihana et al., 2024).

Beyond knowledge transmission, the session also served as a means to assess the public's perceptions and awareness of the importance of timely access to healthcare services. Field observations and medical staff reports highlighted that many DHF cases are brought to the hospital at a late stage due to the family's lack of awareness about the critical phase of the

disease. This is in line with findings by Latifah (2024), who emphasized that delayed treatment is often caused by the family's underestimation of the disease's progression and the failure to recognize early warning signs.

Following the session, patients and families reported greater motivation to maintain environmental hygiene, including securing clean water sources and covering water containers to eliminate mosquito breeding grounds. Emphasis was also placed on the importance of regular handwashing using soap as a basic yet effective hygiene behavior to prevent not only DHF but also various other infectious diseases (Mardiyani et al., 2020).

In addition, participants were encouraged to ensure proper drainage and regularly clean areas around their homes that could serve as mosquito habitats. These practical actions aligned with the community-based preventive strategies outlined in national health programs and WHO recommendations.

Ultimately, this health education activity served not only as an informative session but also as an early intervention strategy to instill preventive behavior. The session successfully fostered a sense of responsibility among community members to take part in controlling the spread of DHF within their households and neighborhoods. The integration of family involvement and behavioral change strategies into public health interventions is vital for sustainable disease prevention and health promotion in dengue-endemic regions like Indonesia.

Figure 1. implementation of activities

4. Conclusions

The health education initiative on Dengue Hemorrhagic Fever (DHF) at UPT RSUD Labuang Baji Makassar successfully enhanced the awareness and understanding of patients, families, and hospital visitors regarding the prevention and early detection of DHF. The program emphasized the critical importance of recognizing early symptoms, seeking timely medical care, and adopting preventive behaviors—particularly during the rainy season when the risk of DHF transmission is heightened.

By involving family members directly in the educational process, the program promoted community-based prevention strategies and encouraged individual responsibility for environmental cleanliness and mosquito control. The interactive nature of the session, supported by educational materials such as leaflets and visual aids, helped improve retention of key messages.

Overall, this health education activity demonstrated that targeted communication and community engagement can significantly contribute to reducing the risk of DHF transmission. Continued efforts in health promotion, especially through hospital and primary healthcare collaboration, are essential in achieving long-term public health outcomes in dengue-endemic areas.

Conflict of Interest

No conflicts of interest

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